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| 09/604,218      | 06.27/2000  | Tulin Kuzulugil Hidayetoglu | 98-R-CLU-363        | 4131             |

7590 10.17.2002

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| EXAMINER |
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TSOY, ELENA

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| ART UNIT | PAPER NUMBER |
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1762

DATE MAILED: 10/17/2002

12

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/604,218

Applicant(s)

HIDAYETOGLU, TULIN  
KUZULUGIL

Examiner

Elena Tsoy

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 20-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*Response to Amendment*

1. Amendment filed on September 4, 2002 has been entered. Claims 1-15, 20-23 are pending in the application.

*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4, 6-12, 14, 15, 20, 21, 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Booher (US 5,156,787) in view of Miyamoto et al (US 6,001,440) for the reasons of record as set forth in Paragraph No. 3 of the Office Action mailed on June 4, 2002 (Paper No. 10).
4. **Claims 1, 2, 4-12, 14, 20, 21, 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al (US 5,004,497) in view of Miyamoto et al (US 6,001,440) for the reasons of record as set forth in Paragraph No. 4 of the Office Action mailed on June 4, 2002 (Paper No. 10).
5. **Claims 3, 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata et al (US 5,004,497) in view of Miyamoto et al (US 6,001,440), as applied above, and further in view of Darfler (US 5,498,462) for the reasons of record as set forth in Paragraph No. 5 of the Office Action mailed on June 4, 2002 (Paper No. 10).

6. **Claims 13, 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Booher (US 5,156,787) in view of Miyamoto et al (US 6,001,440), as applied above, and further in view of Nakamoto et al (US 6,098,612) for the reasons of record as set forth in Paragraph No. 6 of the Office Action mailed on June 4, 2002 (Paper No. 10).

***Response to Arguments***

7. Applicants' arguments filed September 4, 2002 have been fully considered but they are not persuasive.

(A) Applicants argue that Booher teaches that it is only the reinforcing fibers 14 that have a controlled orientation as well as a controlled density within the resin matrix (column 2, lines 37-40); and heat conducting elements such as powders of graphite, copper or the like are uniformly distributed throughout the resin material to aid in the dissipation of heat (column 2, lines 50-60). The amended claims now recite that the heat and wear resistant fibers vary in concentration wherein there is an increase in concentration from the first friction surface to the second nonengaging surface. Nowhere does the Booher patent teach or suggest such this feature, or the combination as claimed.

The Examiner respectfully disagrees with this argument. First of all, the Examiner would like to clarify the Applicants' statement "The amended claims now recite that the heat and wear resistant fibers vary in concentration wherein there is an increase in concentration from the first friction surface to the second nonengaging surface". According to specification as filed, the heat and wear resistant fibers 10 are *uniformly* distributed throughout the resin material. The concentration of the heat and wear resistant fibers 10 gradually increases throughout the resin

Art Unit: 1762

material only *relatively* to concentration of the heat conducting elements 12 (See Fig. 2, page 12, lines 10+). In other words, the *absolute* concentration of the heat and wear resistant fibers 10 does not change, only *relative* concentration of the heat and wear resistant fibers 10 increases from the first friction surface to the second nonengaging surface.

As was discussed in the last Office Action, Booher teaches that the heat and wear resistant fibers 14 are *uniformly* distributed throughout the resin material (as in claimed invention) (See column 2, lines 42-45), and the heat conducting elements (added to resin material to aid in the dissipation of heat) are also *uniformly* distributed throughout the resin material (See column 2, lines 54-55). However, Miyamoto et al. teaches that dispersing heat conducting elements in a resin material with substantially continuous concentration gradient in the direction of thickness improves the dissipation of heat in thickness direction compared to uniform distribution (See column 1, lines 37-45; column 2, lines 37-50; column 4, lines 30-35). Accordingly, one of ordinary skill in this art would use teaching of Miyamoto et al with the expectation of providing any heat dissipating materials (including Booher) with the desired improvement in the dissipation of heat in thickness direction compared to uniform distribution, as taught by Miyamoto et al. The modified material of Booher in view of Miyamoto et al would have continuous concentration gradient of heat conducting elements in a resin material, for example, increased concentration of the heat conducting elements at one side so that the relative concentration of uniformly distributed reinforcing fibers (relatively to the concentration of the heat conducting elements) would be decreased at the same side.

Since Shibata et al disclose features similar to that of Booher, all above discussion can be repeated for combination of Shibata et al and Miyamoto et al.

(B) Applicants argue that one of ordinary skill in this art would not look to the Miyamoto et al patent as providing a teaching for a concentration gradient of heat conducting elements for a friction material since the Miyamoto et al. patent particularly relates to thin films suited for laser printers and electrophotographic copying machines as described in column 1 of that patent. Even though the Miyamoto et al. patent teaches of providing a concentration gradient for a heat conducting powder, the angle of concentration gradient is arbitrary (column 2, lines 50-53) and the thickness of the film (column 3, lines 30-34) is so thin that one of any skill in the friction art would not even consider the teachings of this patent. Furthermore, the Miyamoto et al. patent does not suggest increasing the concentration of the heat and wear resistant fibers as claimed.

The Examiner respectfully disagrees with this argument. Miyamoto et al patent is cited to show that providing a concentration gradient of heat conducting elements in heat dissipating material improves the heat dissipation compared to uniform distribution of the heat conducting elements in the *same* material. Therefore, thickness of the heat dissipating material of Miyamoto et al is *irrelevant*.

### *Conclusion*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (703) 605-1171. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (703) 308-2333. The fax phone numbers for the

Art Unit: 1762

organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

*ET*

Elena Tsoy  
Examiner  
Art Unit 1762

October 11, 2002

  
**MICHAEL BARR**  
**PRIMARY EXAMINER**